SEQUENCE LISTING

<110> Leng, Jay

<120> PROTEASE SPECIFIC CLEAVABLE LUCIFERASES AND METHODS OF USE THEREOF

<130> 105175-159907

<140> Not Yet Known

<141> 2000-07-19

<160> 29

<170> PatentIn Ver. 2.1

<210> 1

<211> 936

<212> DNA

<213> Renilla reniformis

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<221> CDS

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25 \

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Phe Ile Asn Tyr Tyr Asp Ser Glu Lys His Ala Glu Asn Ala Val Ile
35 40 45

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Phe Leu His Gly Asn Ala Ala Ser Ser Tyr Leu Trp Arg His Val Val
50 55 60

cca cat att gag cca gta gcg cgg tgt att ata cca gat ctt att ggt 240
Pro His Ile Glu Pro Val Ala Arg Cys Ile Ile Pro Asp Leu Ile Gly
65 70 75 80

atg ggc aaa tca ggc aaa tct ggt aat ggt tct tat agg tta ctt gat 288
Met. Gly Lys Ser Gly Lys Ser Gly Asn Gly Ser Txr Arg Leu Leu Asp

1

85 90 95

cat tac aaa tat ctt act gca tgg ttt gaa ctt ctt aat tta cca aag 336 His Tyr Lys Tyr Leu Thr Ala Trp Phe Glu Leu Leu Asn Leu Pro Lys 100 100 105 105 110 110 384 aag atc att ttt gtc ggc cat gat tgg ggt ggt tgt ttg gga ttt cat 115 115 120 120 125 125 125 125 384 tat agc tat gag cat caa gat aag atc aag atc aag gat gga gaa tagc gt gga gaa atc ggc ata ggt gaa gaa gaa gaa gaa gaa gaa gaa
aag atc att ttt gtc ggc cat gat tgg ggt gct tgt ttg gca ttt cat lys lie lie Phe Val Gly His Asp 120 Trp Gly Ala Cys Leu Ala Phe His 125 Trp Gly Ala Cys Leu Ala Phe His 125 Trp Gly Ala Cys Leu Ala Phe His 125 Trp Gly Ala Cys Leu Ala Phe His 125 Trp Gly Ala Cys Leu Ala Phe His 125 Trp Ser Tyr Glu His Gln Asp Lys lle Lys Ala lle Val His Ala Glu 130 Try Ser Tyr Glu His Gln Asp Lys lle Lys Ala lle Val His Ala Glu 140 Trp Ser Val Val Asp Val lle Glu Ser Trp Asp Glu Trp Pro Asp lle Glu Glu 145 Trp Pro Asp lle Glu 155 Trp Asp Glu Trp Pro Asp lle Glu 165 Trp Asp Glu Glu Gly Glu Lys Met Val Leu 165 Trp His Ala Leu lle Lys Ser Glu Glu Glu Gly Glu Lys Met Val Leu 175 Trp Glu Asp Asp Phe Phe Val Glu Trp Met Leu Pro Ser Lys lle Met Arg 180 Trp Lys Leu Glu Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu 205 cross as a ggt gas atc ccg 672
aag atc att ttt gtc ggc cat gat tgg ggt gct tgt ttg gca ttt cat last lits lis last l
Lys Ile Ile Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His 115
Lys Ile Ile Phe Val Gly His Asp Trp Gly Ala Cys Leu Ala Phe His 115
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tat agc tat gag cat caa gat aag atc aaa gca ata gtt cac gct gaa 432 Tyr Ser Tyr Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu 130 agt gta gta gat gtg att gaa tcaa tgg gat gaa tgg cct gat att gaa 85
Tyr Ser Tyr Glu His Gln Asp Lys Ile Lys Ala Ile Val His Ala Glu agt gta gta gat gat gtg att gaa tca tgg gat gaa tgg cct gat att gaa 480 Ser Val Val Asp Val Ile Glu Ser Trp Asp Glu Trp Pro Asp Ile Glu 145
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Ser Val Val Asp Val Tie Glu Ser Trp Asp Glu Trp Pro Asp Tie Glu 145
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aaa ggt gaa gtt cgt cgt cca aca tta tca tgg cct cgt gaa atc ccg 672
Lys Gly Glu Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro
210 215 220
tta gta aaa ggt ggt aaa cct gac gtt gta caa att gtt agg aat tat 720
Leu Val Lys Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr
225 230 235 240
aat gct tat cta cgt gca agt gat gat tta cca aaa atg ttt att gaa 768
Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu
Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu 245 250 255
245 250 255
245 250 255
245 250 255 teg gat cca gga tte ttt tee aat get att gtt gaa gge gee aag aag 816
tcg gat cca gga ttc ttt tcc aat gct att gtt gaa ggc gcc aag aag 816 Ser Asp Pro Gly Phe Phe Ser Asn Ala Ile Val Glu Gly Ala Lys Lys 260 265 270
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275 280 285

gaa gat gca cct gat gaa atg gga aaa tat atc aaa tcg ttc gtt gag 912 Glu Asp Ala Pro Asp Glu Met Gly Lys Tyr Ile Lys Ser Phe Val Glu 290 295 300

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936

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<213> Renilla reniformis

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200 Lys Gly Glu Val Arg Arg Pro Thr Leu Ser Trp Pro Arg Glu Ile Pro

185 Lys Leu Glu Pro Glu Glu Phe Ala Ala Tyr Leu Glu Pro Phe Lys Glu

Leu Val Lys Gly Gly Lys Pro Asp Val Val Gln Ile Val Arg Asn Tyr 230 235 240

Asn Ala Tyr Leu Arg Ala Ser Asp Asp Leu Pro Lys Met Phe Ile Glu

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Phe	Pro	Asn	Thr	Glu	Phe	Val	Lys	Val	Lys	Gly	Leu	His	Phe	Ser	Gln
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Glu	Asp	Ala	Pro	Asp	Glu	Met	Gly	Lys	Tyr	Ile	Lys	Ser	Phe	Val	Glu
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100 105 110

				~+~		cat	~~+	- ~~	~~+	~a+	+~+	++~	<i>a</i> a		ast	384
_						His										304
шув	110	115	1110	Val	GLY	111.5	120		O.J		Cyb	125				
tat	agc	tat	gag	cat	caa	gat	aag	atc	aaa	gca	ata	gtt	cac	gct	gaa	432
Tyr	Ser	Tyr	Glu	His	Gln	Asp	Lys	Ile	Lys	Ala	Ile	Val	His	Ala	Glu	
	130					135					140					
agt	gta	gta	gat	gtg	att	gaa	tca	tgg	gat	gaa	tgg	cct	gat	att	gaa	480
Ser	Val	Val	Asp	Val	Ile	Glu	Ser	Trp	Asp		Trp	Pro	Asp	Ile		
145					150					155					160	
					_											
_	_			_		aaa		_	_		_		_	_	_	528
GIU	Asp	тте	Ата	165	TIE	Lys	ser	GIU	170	GIA	GIU	пув	Met	175	пеп	
				103					170					1/3		
gag	aat	aac	ttc	ttc	ata	qaa	acc	ato	tta	cca	tca	aaa	atc	ato	aσa	576
						Glu		_	_					_	_	
			180					185				_	190		_	
aag	tta	gaa	cca	gac	gaa	gtt	gac	gca	tat	ctt	gaa	cca	ttc	aaa	gag	624
Lys	Leu	Glu	Pro	Asp	Glu	Val	Asp	Ala	Tyr	Leu	Glu	Pro	Phe	Lys	Glu	
		195					200					205				
		-	_	_	_	cca						_	_		_	672
Lys	_	Glu	Val	Arg	Arg	Pro	Thr	Leu	Ser	Trp		Arg	Glu	Ile	Pro	
	210					215					220					
++=	at a	222	aat	aat		cct	G2.C	a++	at a	C22	2++	~++	200	22+	tat	720
	_					Pro	_	_	_			_				, 20
225		_, _	,	0-7	230					235			9		240	
aat	gct	tat	cta	cgt	gca	agt	gat	gat	tta	cca	aaa	atg	ttt	att	gaa	768
Asn	Ala	Tyr	Leu	Arg	Ala	Ser	Asp	Asp	Leu	Pro	Lys	Met	Phe	Ile	Glu	
				245					250					255		
_	_					tcc		_		_	_		_	_	_	816
Ser	Asp	Pro	_	Phe	Phe	Ser	Asn		Ile	Val	Glu	Gly		Lys	Lys	
			260					265					270			
	ac+	224	254	~		~+ <i>~</i>		~+-		~~-	a + +	as t		.	a nn	864
				-		gtc Val										004
- 116	-10	275	T 11.1	GIU	- 11G	Val	280	v d I	-1 A B	GIY	Ten	285	r 116	Der	GIII	
							200									
gaa	gat	gca	cct	gat	gaa	atg	gga	aaa	tat	atc	aaa	tcg	ttc	gtt	gag	912
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936

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<211> 311

<212> PRT

<213> Renilla reniformis (mutated sequence)

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recognition sequences

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      recognition sequences
<400> 25
Leu Glu His Asp
  1
<210> 26
<211> 4
<212> PRT
<213> Artificial Sequence
<220>
<223> X at residues 1 to 3 can be any amino acid
<220>
<223> Description of Artificial Sequence: Protease
      recognition sequences
<400> 26
Xaa Xaa Xaa Asp
  1
<210> 27
<211> 8
<212> PRT
<213> Artificial Sequence
<400> 27
Arg Pro Leu Gly Ile Ile Gly Gly
  1
```

```
<210> 28
<2113 3
<212>\PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Protease
      recognition sequence
<400> 28
Glu Gly Arg
  1
<210> 29
<211> 3
<212> PRT
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence: Protease
      recognition sequence
<400> 29
Val Leu Lys
  1
```

and the second s